



6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 90

[PS Docket No. 13-229; RM-11635; FCC 13-121]

Vehicular Repeaters

AGENCY: Federal Communications Commission.

ACTION: Proposed rule.

SUMMARY: In this Order and Notice of Proposed Rulemaking, the Commission proposes an amendment to the Commission's rules to allow the licensing and operation of vehicular repeater systems and other mobile repeaters by public safety licensees on certain frequencies in the VHF band.

DATES: Submit comments on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Submit reply comments **[INSERT DATE 90 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments, identified by PS Docket No. 13-229; RM-11635, by any of the following methods:

- Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Federal Communications Commission's Web Site: <http://fjallfoss.fcc.gov/ecfs2/>. Follow the instructions for submitting comments.
- Mail: U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554. Commercial overnight mail (other than U.S.

Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.

- Hand or Messenger Delivery: 445 12th St., SW, Room TW-A325, Washington, DC 20554.
- People with Disabilities: Contact the FCC to request reasonable accommodations (accessible format documents, sign language interpreters, CART, etc.) by e-mail: FCC504@fcc.gov or phone: 202-418-0530 or TTY: 202-418-0432.

For detailed instructions for submitting comments, additional information on the rulemaking process, and where to find materials available for inspection, see the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: Thomas Eng, Policy and Licensing Division, Public Safety and Homeland Security Bureau, Federal Communications Commission, 445 12th Street, SW., Washington, DC 20554, at (202) 418-0019, TTY (202) 418-7233, or via e-mail at Thomas.Eng@fcc.gov.

SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Notice of Proposed Rulemaking in PS Docket No. 13-229; RM-11635; adopted and released September 16, 2013. The complete text of this document is available for inspection and copying during normal business hours in the FCC Reference Information Center, Portals II, 445 12th Street, SW, Room CY-A257, Washington, DC 20554. This document may also be purchased from the Commission's duplicating contractor, Best Copy and Printing, Inc., in person at 445 12th Street, SW, Room CY-B402, Washington, DC 20554, via telephone at (202) 488-5300, via facsimile at (202) 488-5563, or via email at FCC@BCPIWEB.com. Alternative formats (computer diskette, large print, audio cassette, and Braille) are available to persons with disabilities or by sending an

e-mail to FCC504@fcc.gov or calling the Consumer and Governmental Affairs Bureau at (202) 418-0530, TTY (202) 418-0432. This document is also available on the Commission's Web site at <http://www.fcc.gov>.

Comments

Pursuant to §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments and reply comments. Comments may be filed using: (1) the Commission's Electronic Comment Filing System (ECFS), (2) the Federal Government's eRulemaking Portal, or (3) by filing paper copies. See Electronic Filing of Documents in Rulemaking Proceedings, 63 FR 24121 (May 1, 1998).

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://fjallfoss.fcc.gov/ecfs2/> or the Federal eRulemaking Portal: <http://www.regulations.gov>.
- Paper Filers: Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.
 - Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.
 - All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m.

All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building.

- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

Introduction

In this Order and Notice of Proposed Rulemaking, which we adopt in response to an Amended Petition for Rulemaking filed by Pyramid Communications, Inc. (Pyramid), we solicit comment on whether to amend Part 90 of the Commission's rules to allow the licensing and operation of vehicular repeater systems (VRS) and other mobile repeaters by public safety licensees on certain frequencies in the VHF band. Mobile repeaters are beneficial for public safety because they can provide first responders with enhanced in-building radio coverage at emergency sites, thereby enabling first responders to remain in radio contact when they are inside a building. For example, a mobile repeater enables firefighters to communicate on hand-held radios with their command center when they enter a building, encounter an in-building fire, and need to call for backup assistance on the spot. Without a repeater to relay the communications, the firefighters inside the building might be cut off from communicating with the command center.

Given the importance of mobile repeaters to public safety, the purpose of this proceeding is to explore whether there is a need to make additional spectrum available to support mobile repeater capability. For the reasons discussed below, we grant the Amended Petition in part and

initiate a rulemaking that proposes to allow VRS operations on six remote control and telemetry channels at 173 MHz, subject to coordination procedures. However, we deny the portion of the Amended Petition that seeks to initiate a rulemaking to permit VRS operations on nine Federal and forest firefighting channels in the 170-172 MHz band.

Background

Portions of the VHF band are used by Private Land Mobile Radio Service licensees, including public safety licensees, predominantly for voice operations. The Commission's rules designate 488 frequencies, totaling approximately 3.6 megahertz of spectrum in the VHF band, for public safety use. Licensees may operate mobile repeater stations, including vehicular repeaters, on certain VHF mobile frequencies under § 90.247 of the Commission's rules.

On June 27, 2011, Pyramid, a manufacturer of wireless data and voice equipment, filed a Petition for Rulemaking requesting that the Commission amend its rules to expand the number of VHF band frequencies available for VRS use by public safety licensees. On August 16, 2011, Pyramid filed the Amended Petition to provide clarification and correct typographical errors. We treat the Amended Petition as superseding the Initial Petition, but we also consider four additional VHF frequencies that were identified in the Initial Petition but not included in the Amended Petition.

In the Amended Petition, Pyramid contends that VRS units are essential to extend coverage of radio systems to the inside of buildings so that first responders going into a building can maintain communications. According to Pyramid, current filter technology requires VRS units to operate on frequencies that are separated by 2-5 megahertz from the system's main licensed frequencies. Pyramid asserts that there are insufficient existing VHF frequencies to support VRS that are sufficiently distant from the 150-159 MHz public safety frequencies and

that are not already saturated with other existing base/mobile operations. Pyramid therefore proposes that the Commission designate additional VHF spectrum for VRS use.

Pyramid identifies two specific VHF allocations that it contends would be suitable for communication between portable radios and VRS units. First, Pyramid identifies nine frequencies in the 170-172 MHz band that are allocated for Federal use on a primary basis but are also available for assignment to non-Federal licensees engaged in forest firefighting and forest conservation activities. Pyramid proposes to lift this limitation so that these channels could be used by VRS units for purposes other than fighting forest fires, e.g., for fighting in-building fires. Pyramid also states that to address potential concerns that VRS use by police might cause interference to firefighters, Pyramid “would not oppose” limiting VRS use of these frequencies to firefighters.

Second, Pyramid identifies six frequencies in the 173 MHz band currently designated for fixed remote control and telemetry operations. These six frequencies are shared between the Public Safety and Industrial/Business (I/B) Pools, have a 6 kilohertz bandwidth limitation, and do not permit voice operation due to the telemetry designation. Pyramid states that the Land Mobile Communications Council (LMCC) “has developed frequency coordination standards by which radio systems can be coordinated on adjacent frequencies where bandwidths overlap.” Pyramid contends that utilization of these standards will ensure that VRS use of the six frequencies identified in the Amended Petition will not cause adjacent channel interference. On this basis, Pyramid proposes that the Commission lift the restriction on voice operation and allow low power VRS operation on the six 173 MHz frequencies.

On October 14, 2011, the Public Safety and Homeland Security Bureau (Bureau) released a public notice seeking comment on the Amended Petition. The Bureau sought

comment on Pyramid’s proposals regarding the 170-172 MHz forest firefighting frequencies and the 173 MHz telemetry frequencies. The Bureau asked whether the Commission should remove the limitation in § 90.20(d)(33), which imposes a bandwidth limit of 6 kilohertz on the six telemetry channels, since voice communications typically occupy a bandwidth of 11.25 kilohertz. The Bureau also noted that the Initial Petition, but not the Amended Petition, had proposed to allow VRS use of four additional frequencies immediately adjacent to the six telemetry channels. Accordingly, the Bureau asked whether the Commission should consider all ten 173 MHz frequencies for VRS operation. Finally, the Bureau sought comment on “the potential costs and benefits of Pyramid’s proposal, including: (1) how and in what ways the remote control and telemetry channels are used today; (2) the compatibility of the proposed VRS voice operations with incumbent remote control and telemetry operations; and (3) adjacent channel interference as a result of modifying or removing bandwidth limitations on frequencies in the 173 MHz band.” The comment period closed on November 18, 2011.

Comments

The Commission received 31 responsive comments and reply comments, with supporting commenters outnumbering opposing commenters. Full supporters include various public safety agencies, equipment dealers, and individuals. Two certified frequency coordinators offer more reserved support for VRS use of the 173 MHz channels. Four certified frequency coordinators and a county water management agency oppose the petition.

Comments supporting Pyramid proposals

Nineteen commenters support all of Pyramid’s proposals. Some of these commenters argue that in-building portable radio coverage can be challenging or non-existent due to the use of modern construction materials that attenuate radio signals, and that vehicular repeaters are an

important link between portable and base communications. Several parties support this proceeding for the safety of first responders. Mark Schaff (Schaff) argues that the VHF plan makes it difficult to achieve 3-5 megahertz separation between the mobile transmit frequencies and the vehicle repeater frequency. Therefore, Schaff states that making frequencies at 170 MHz available for VRS would make it easier to set up in-band repeaters. Wisconsin State Patrol (Wisconsin) urges the Commission to consider all ten frequencies at 173 MHz (including the four identified in the Initial Petition), as well as the 170-172 MHz frequencies, for VRS operation.

Other commenters support specific elements of Pyramid's proposal but take no position on others. The Commonwealth of Virginia, Department of State Police (Commonwealth) supports VRS use of the six 173 MHz telemetry frequencies and also supports allowing VRS use of 170-172 MHz frequencies, but for forestry purposes only. The Association of Public-Safety Communications Officials-International, Inc. (APCO), a certified frequency coordinator, states that it "is not prepared to take a position on all of Pyramid's specific recommendations at this time" but that it "strongly support[s] the initiation of a rulemaking proceeding to explore ways to improve VRS capability." The Enterprise Wireless Alliance (EWA), another certified coordinator, takes no position on VRS use of 170-172 MHz frequencies, but supports consideration of designating some 173 MHz frequencies for VRS voice operations "subject, of course, to appropriate frequency coordination procedures." EWA cautions that VRS use of these frequencies must be carefully coordinated to ensure continued availability of the telemetry channels for use by EWA and Utilities Telecommunications Council (UTC) members, "who have made productive use of these frequencies to support a variety of essential business enterprise and critical infrastructure non-voice applications." EWA opposes rule changes "that

might compromise these operations,” but posits that “[g]iven the highly localized nature of VRS usage, [the telemetry] frequencies should be able to be reused in adjacent communities without interference.” APCO, Pyramid, and Wisconsin also state that frequency coordination can minimize potential VRS interference to remote control and telemetry operations.

Comments opposing VRS on 170-172 MHz

Two other certified frequency coordinators, the Forestry Conservation Communications Association (FCCA) and the International Municipal Signal Association/International Association of Fire Chiefs (IMSA/IAFC), oppose VRS use of the 170-172 MHz frequencies. While these parties do not oppose the concept of VRS, they assert that because the 170-172 MHz band frequencies are assigned on a primary basis to the federal government, the Commission lacks authority to allow VRS use absent concurrence from federal users and/or the National Telecommunications and Information Administration (NTIA). IMSA/IAFC also express concern that VRS use could interfere with use of these channels for forest firefighting operations. FCCA notes that the locations of forest fires cannot be predicted, so “[o]nce a fire starts, it is critical to be able to move into an area quickly and establish communications.” IMSA/IAFC state that “[t]here is often no clear distinction between forested and non-forested areas, and buildings, shopping malls and arenas are increasingly located at the perimeters of forested areas.” Both commenters also cite as precedent a 2003 determination by the Wireless Telecommunications Bureau that forest firefighting channels are not routinely available for low power police surveillance operations.

Comments opposing VRS on 173 MHz telemetry channels

The Yuba County Water Agency, California (Yuba) and certified frequency coordinators UTC and the American Petroleum Institute (API) express concerns that VRS could interfere with

incumbent telemetry operations in the 173 MHz band. UTC states that allowing voice operations on these frequencies “would threaten interference to [telemetry] operations, thereby jeopardizing the underlying services that they support and the general public that relies on those services.” UTC also contends that existing frequency coordination procedures will not mitigate the risk of interference because they are designed to address interference between adjacent voice systems rather than interference between voice-based VRS and data-based telemetry/remote control operations. Yuba contends that “[t]here is a high likelihood that police and fire use of [VRS] would interfere with the Agency telemetry system.” API argues that “Pyramid does not describe how its proposal will not result in the very interference to others that it seeks to avoid (both from and to Public Safety VRS operations) for itself.”

UTC and API also argue that Pyramid has failed to document the need for additional spectrum to support VRS. UTC asserts that there is “very little if any technical justification in the petition for the relief that Pyramid seeks, and there is almost no discussion of possible alternatives and/or interference mitigation strategies.” API argues that Pyramid has not demonstrated why VRS could not be accommodated on existing frequencies through improved filter technology or regional, state and local planning. API suggests that it is premature to conclude that the VHF band is saturated with existing base/mobile operations because narrowbanding could make additional VHF spectrum available after the January 1, 2013 deadline. API also contends that critical infrastructure industry entities have greater need than VRS for additional spectrum.

In reply, the Commonwealth argues that VRS use of telemetry frequencies “to help fill a critical gap in public safety coverage for first responders” should take priority over “the risk of minor delays in utility monitoring.” The Commonwealth also contends that the risk of VRS

causing interference to utility telemetry is low because VRS use will be highly sporadic. Indeed, given that VRS units are intended for temporary use at indeterminate locations, the Commonwealth argues that VRS use should not be subject to frequency coordination.

Order

As evidenced by § 90.247 of the rules, the Commission has long recognized the public interest benefit of vehicular repeaters (mobile repeater stations), which provide in-building coverage and extended communications range for hand-held units used by police, fire, and rescue personnel in the field. As we noted above, mobile repeaters can improve the safety of first responders by enabling them to stay in radio contact with their command centers in difficult coverage environments where they might otherwise be cut off from communicating. We point out that licensees may operate mobile repeater stations on most frequencies in the VHF band without any rule change under § 90.247. The predominant use of mobile repeater stations is for land mobile voice operation, which is allowed on most VHF frequencies.

However, a rulemaking is necessary to consider allowing mobile repeater stations on the particular VHF frequencies that Pyramid identified because these frequencies have specific rules and limitations that render the frequencies incompatible with mobile repeater stations absent a rule change. For example, the six telemetry and remote control channels are non-voice by definition, and thus, our rules do not allow voice operation and therefore do not allow mobile repeater station operations on telemetry and remote control channels. Hence, Pyramid urges the Commission to “remov[e] the thirty year old restriction on voice operation.” The Federal forest firefighting channels have limitations on allocation and how the channels are used that are also incompatible with Pyramid’s proposed mobile repeater stations use, absent rule changes.

In its Amended Petition, Pyramid states that public safety users in the VHF band have a particular need for an in-band VRS solution because there is virtually no allocation of public safety spectrum that can be used for VRS that provides the required spectral separation from the 150-159 MHz operating frequencies and that is not already saturated with existing base/mobile operations. The record persuades us that we should initiate a rulemaking proceeding to determine whether additional spectrum is needed to support VHF in-band mobile repeater stations. Accordingly, by adopting the accompanying Notice of Proposed Rulemaking we grant the portion of Pyramid's Amended Petition that seeks to initiate such a proceeding.

However, we deny the portion of Pyramid's Amended Petition that seeks to initiate a proceeding regarding the nine Federal and forest firefighting channels at 170-172 MHz. On April 3, 2013, NTIA filed a letter recommending that the Commission deny the Pyramid Petition in part with respect to these channels. NTIA noted that the U.S. Department of Agriculture and the U.S. Forest Service make extensive use of these channels. NTIA states that because the Forest Service supports critical public safety operations, NTIA needs to ensure an interference-free environment. NTIA opposes even secondary status for VRS users because VRS public safety services should not be placed at risk by creating conflicts with primary Federal safety operations, and neither group will want to face interference or other coordination conflicts during an operation. Based on NTIA's recommendation, we decline to include the nine Federal channels in our rulemaking proceeding.

We also decline to include in our rulemaking proceeding the four additional 173 MHz frequencies identified by Pyramid in the Initial Petition. Because Pyramid did not list these frequencies in the Amended Petition, it is not clear whether Pyramid intended to propose their inclusion, but even if it did so intend, we believe they are not suitable for VRS use. Two of the

four frequencies (173.210 and 173.390 MHz) have a bandwidth limit of only 3 kilohertz, which is insufficient bandwidth for satisfactory voice operation based on today's available technology. We also agree with APCO that the four frequencies should not be considered for VRS use because the 6.25 kilohertz separation between the lower two and upper two frequencies "results in insufficient separation between the two frequencies for voice use, and makes coordination difficult."

Notice of Proposed Rulemaking

In this Notice of Proposed Rulemaking, we seek comment on rule amendments to provide for the expanded use of mobile repeaters for public safety. Although we do not seek to expand the authority for mobile repeaters under § 90.247, we propose to amend §§ 90.20 (limitations 32, 33, and 34) and 90.175 of our rules to enable mobile repeaters to operate on the telemetry channels discussed above. We also seek comment on whether frequency coordination methods could protect telemetry users from interference. Next, we seek comment on issues raised in the comments to the public notice, including wide area mobile repeater operations, bandwidth, and power. We also seek comment on the costs and burdens of rule changes, and on whether current mobile repeater filter technologies can support reduced frequency separation requirements. Finally, we explore the mobile repeater environment in other public safety bands besides VHF, and seek comment on Industrial/Business licensees' usage of mobile repeaters.

Telemetry channels

We seek comment on whether to permit public safety mobile repeater station operations on the six remote control and telemetry channels at 173 MHz subject to coordination. The record suggests that there may be a need to make additional VHF channels available for VRS use beyond those that are already available. We seek comment on whether this is the case. Are

frequencies in the 150-159 MHz band not suitable for VRS use, as Pyramid contends, because of limited spectral separation and heavy use by existing base mobile operations? Are there are other alternatives that should be considered, as API and UTC suggest? For example, has implementation of the Commission's narrowbanding mandate freed up VHF spectrum that could be used for VRS? Should VRS spectral needs be given priority over other potential uses, such as critical infrastructure use?

To the extent that additional VHF spectrum may be needed for VRS use, we seek comment on the appropriateness of making the six 173 MHz remote control and telemetry channels available for this purpose. Do commenters agree with EWA that neighboring VRS users should be able to share use of the same frequency given the localized and limited time nature of such operations, and that such sharing should minimize the potential for harmful interference to incumbent telemetry users? We note that some telemetry data operations are used for safety-related purposes, such as monitoring and controlling water quality and volume for public health and flood control. Would frequency coordination be sufficient to mitigate the risk of interference between VRS and telemetry uses? Should we consider modifying the current VHF band coordination methodology, including the use of exclusion zones, to reduce instances of interference? Since mobile repeater stations are not fixed operations, we seek comment on whether a modified VHF coordination practice could accommodate mobile repeater stations. We also seek comment on alternative frequency coordination procedures that could accommodate such usage.

Protection of telemetry users

We seek comment about the typical configuration and usage of telemetry stations. Are telemetry systems generally point-to-point, point-to-multipoint, or a mix? What are typical duty

cycles and data rates? What types of error correction and retransmit protocols do telemetry operators use? In the context of telemetry station configuration and usage, what is the best way to protect them from mobile repeater stations through coordination? For example, is it feasible to prohibit mobile repeater use inside the service area of a co-channel incumbent station (*i.e.*, an exclusion zone)? We invite suggestions for other coordination procedures, depending on the characteristics of the incumbent telemetry station. Would an exclusion zone coordination methodology address UTC's concern about the lack of a frequency coordination standard for voice and data operations? Would a typical public safety mobile repeater station licensee be able to instruct its first responders to avoid using a co-channel frequency for mobile repeater stations in these exclusion zones with reasonable accuracy?

We seek comment on whether frequency coordinators could add special conditions to the mobile repeater applications, e.g., by listing active, co-channel incumbent call signs and associated exclusion zones that demarcate where mobile repeater operations would be specifically prohibited from the authorization requested by the application. We seek comment on possible exceptions to such an approach, such as when the mobile repeater station user has obtained written concurrence from the incumbent licensee, or the VRS user and incumbent user are the same licensee. What should be the protocol if a mobile repeater station user becomes licensed on a vacant frequency, but a telemetry user is later licensed on that frequency in the mobile repeater station user's operating area? Should a mobile repeater be allowed to cease protecting the exclusion zone if the incumbent telemetry license were to expire, cancel, or terminate and absent the filing of a petition for reconsideration of the change in license status?

Wide area mobile repeater operations

If a wide area or statewide applicant cannot achieve complete mobile repeater coverage on one telemetry frequency due to a conflict with exclusion zones, could the applicant achieve greater coverage by applying for multiple telemetry frequencies, thereby avoiding interference in the prohibited exclusion zones? Would these measures address the Commonwealth's argument that frequency coordination is unnecessary in general and unworkable for statewide VRS use?

Frequency bandwidth

Wisconsin supports the use of VRS on telemetry channels, stating that “[a]djacent channel interference issues will be diminished with the imminent conversion of all operations to 11K or less operation.” The six telemetry channels are interleaved with seven channels in the I/B Pool. The spacing between channels is 12.5 kilohertz. Prior to the narrowbanding deadline of January 1, 2013, the interstitial I/B channels had a 20 kilohertz bandwidth limit, while the six telemetry channels have a 6 kilohertz bandwidth limit to minimize mutual bandwidth overlap. However, now that the narrowbanding deadline has passed, the interstitial I/B channels have a bandwidth limit of 11.25 kilohertz, which would allow mobile repeater stations on the telemetry channels to use greater than 6 kilohertz bandwidth and up to 11.25 kilohertz bandwidth without mutual bandwidth overlap. Consequently, we propose to allow mobile repeater operations to use up to 11.25 kilohertz bandwidth on the six telemetry channels. We acknowledge that PLMR stations that meet the efficiency standard of one voice channel per 12.5 kilohertz bandwidth may still use up to 20 kilohertz authorized bandwidth, but that most radios operate at 11.25 kilohertz bandwidth or less.

We seek comment on what proportion of I/B users of the interstitial channels could be affected by bandwidth overlap because they operate at greater than 11.25 kilohertz bandwidth and choose to satisfy the narrowbanding requirement by meeting the efficiency standard. Can

mobile repeater stations operate within the other technical limits of § 90.20(d)(33) of the Commission's rules, or should the Commission not apply these limits to mobile repeater stations on the six telemetry channels? We clarify that the provisions of § 90.247 would apply to VRS or mobile repeater operations on these telemetry channels or any other spectrum that supports such use. We do not perceive a conflict between the rules proposed herein and § 90.247 of the Commission's rules. We also seek comment on whether all operations on the six telemetry channels should remain secondary to adjacent channel land mobile operations now that the narrowband deadline has passed.

Power

The Commonwealth seeks a power limit increase on the telemetry channels for VRS if the channels are made available for VRS use. The current ERP limit for mobile stations is 2 watts; the Commonwealth seeks 5 watts for both VRS and portable radios. The Commonwealth contends public safety "needs dedicated frequencies of equal transmitter power to that of a VHF portable, to create a balanced network." We seek comment on the Commonwealth's proposal, but only for mobile repeater operation on the six telemetry channels. We do not propose to increase the 2-watt power limit for the existing telemetry and remote control use.

Costs and burdens

We also seek comment on the costs and burdens associated with allowing mobile repeater stations on the six telemetry channels. Would incumbent licensees experience any increased costs if we allow mobile repeater stations on the six telemetry channels? Approximately how many more staff-hours would frequency coordinators spend on a mobile repeater station coordination, relative to a non- mobile repeater station coordination in the VHF band, if we impose the coordination requirement that we discussed above? If there is a significant

difference, can frequency coordinators estimate the effect on coordination fees? Does the supposed benefit that mobile repeater stations provide justify an increased coordination cost?

We seek comment on any other costs that we have not considered.

Filters and other technical solutions

We seek comment generally on whether improvements to mobile repeater equipment and filter design could reduce the frequency separation requirements for mobile repeaters. FCCA, UTC, and API argue that Pyramid's frequency spread argument does not establish that the frequencies proposed by Pyramid for VRS use are the only frequencies it could use, or that filter improvements could not reduce the separation requirement. UTC argues that "[t]here is very little if any technical justification in the petition for the relief that Pyramid seeks, and there is almost no discussion of possible alternatives and/or interference mitigation strategies." FCCA states, "perhaps other filter technologies, such as very small surface acoustic wave ('SAW') filters, could be adapted for vehicular repeater use." EWA "urges the VRS vendor community to investigate technological advances that might expand spectrum options in the future."

Accordingly, we seek comment on filter design in general to allow for smaller frequency separation. We also seek comment on the feasibility of adapting SAW filters, or other filter technology, for mobile repeater use. We particularly invite other manufacturers of vehicular and mobile repeaters to comment and provide information on frequency separation requirements for in-band repeaters and filters that can minimize the frequency separation. We also ask commenting parties to discuss the advantages and disadvantages of cross-band repeaters as an alternative to in-band repeaters.

Other public safety bands

Next, we seek comment on whether there are other spectrum bands or frequencies that

could be used for public safety mobile repeater operations. Are there other alternatives in the VHF band? What is the status of mobile repeaters in the 450-470 MHz, 700 MHz, and 800 MHz public safety bands? To what extent do public safety licensees in these bands experience challenges in locating suitable and available frequencies that can be used for mobile repeater stations? Bearing in mind that mobile repeater stations generally are allowed on any private land mobile radio service frequency that the Commission's rules do not designate for an incompatible purpose, what steps could the Commission take to facilitate mobile repeater use in 450-470 MHz, 700 MHz, and 800 MHz bands? Are there adequate frequencies in these bands where land mobile voice operations, and by extension mobile repeater stations, are already permitted, or should the Commission consider changing rules to allow land mobile voice operations and mobile repeater stations on certain frequencies that the rules currently render incompatible with such use? If so, which frequencies should the Commission consider?

Industrial/Business licensees

While much of the discussion herein is focused on public safety users, we also seek comment on the I/B community's interest in using mobile repeater stations in the VHF band. What is the current state of I/B mobile repeater usage? Do I/B licensees need more VHF spectrum for mobile repeater stations that can be shared with existing applications, such as telemetry? Should the Commission include I/B eligibles in this rulemaking and consider amendments to § 90.35 that are analogous to the rule changes we propose *supra* to § 90.20, so that I/B users in addition to public safety users would be allowed to use the six telemetry channels for VRS?

Procedural Matters

Ex Parte Presentations

This matter shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission’s ex parte rules. Persons making ex parte presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral ex parte presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the ex parte presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter’s written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during ex parte meetings are deemed to be written ex parte presentations and must be filed consistent with § 1.1206(b). In proceedings governed by § 1.49(f) or for which the Commission has made available a method of electronic filing, written ex parte presentations and memoranda summarizing oral ex parte presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission’s ex parte rules.

Regulatory Flexibility Analysis

As required by the Regulatory Flexibility Act of 1980, see 5 U.S.C. 603, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant

economic impact on small entities of the policies and rules addressed in this document. The IRFA is set forth in Appendix B of the Order and Notice of Proposed Rulemaking. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines as comments filed in response to this Notice of Proposed Rulemaking as set forth herein, and they should have a separate and distinct heading designating them as responses to the IRFA. The Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, will send a copy of the Order and Notice of Proposed Rulemaking, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA). See 5 U.S.C. 603(a).

Paperwork Reduction Act Analysis

This document contains proposed modified information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Pub. L. 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Pub. L. 107-198, see 44 U.S.C. 3506(c)(4), we seek specific comment on how we might further reduce the information collection burden for small business concerns with fewer than 25 employees.

Congressional Review Act

The Commission will send a copy of this Order and Notice of Proposed Rulemaking in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act (CRA), see 5 U.S.C. 801(a)(1)(A).

Ordering Clauses

Accordingly, IT IS ORDERED that pursuant to sections 4(i) and 303 of the Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303, and § 1.407 of the Commission's rules, 47 CFR 1.407, this Order and Notice of Proposed Rulemaking IS ADOPTED.

IT IS FURTHER ORDERED that pursuant to sections 4(i) and 303 of the Communications Act of 1934, as amended, 47 U.S.C. 154(i) and 303, and §§ 1.401(e) and 1.407 of the Commission's rules, 47 CFR 1.401(e) and 1.407, the petition for rulemaking filed by Pyramid Communications, Inc., on June 27, 2011, as amended on August 16, 2011, IS GRANTED to the extent described herein and IS OTHERWISE DENIED.

IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Order and Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

IT IS FURTHER ORDERED that pursuant to applicable procedures set forth in §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments on this Notice of Proposed Rulemaking on or before **[60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, and interested parties may file reply comments on or before **[90 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

List of Subjects in 47 CFR Part 90

Communications equipment, Radio.

FEDERAL COMMUNICATIONS COMMISSION.

Marlene H. Dortch,
Secretary.

Proposed rules

For the reasons discussed in the preamble, the Federal Communications Commission proposes to amend 47 CFR part 90 as follows:

PART 90 – PRIVATE LAND MOBILE RADIO SERVICES

1. The authority citation for part 90 continues to read as follows:

AUTHORITY: Sections 4(i), 11, 303(g), 303(r) and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r) and 332(c)(7), and Title VI of the Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, 126 Stat. 156.

2. Section 90.20 is amended by revising paragraphs (d)(32), (33), and (34) to read as follows:

§ 90.20 Public Safety Pool.

* * * * *

- (d) * * *

(32) The maximum effective radiated power (ERP) may not exceed 20 watts for fixed stations, 2 watts for mobile stations, and 5 watts for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations in the Public Safety Pool. The height of the antenna system may not exceed 15.24 meters (50 ft.) above ground. All such operation is on a secondary basis to adjacent channel land mobile operations.

(33) For FM transmitters, the sum of the highest modulating frequency in Hertz and the amount of the frequency deviation or swing in Hertz may not exceed 2800 Hz and the maximum deviation may not exceed 2.5 kHz. For AM transmitters, the highest modulation frequency may not exceed 2000 Hz. The carrier frequency must be maintained within .0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 6 kHz, except for mobile repeater stations and hand-carried transmitters that communicate directly with

mobile repeater stations in the Public Safety Pool, in which case the authorized bandwidth may not exceed 11.25 kHz.

(34) This frequency is available on a shared basis with the Industrial/Business Pool for remote control and telemetry operations. In cases where § 90.20(d)(32) applies to this frequency, licensees who are eligible in the Public Safety Pool may also use this frequency for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations subject to the frequency coordination requirements of § 90.175(b)(4). Mobile repeater stations shall not operate within the service areas of active co-channel incumbent remote control and telemetry stations as determined by the applicable frequency coordinator and listed in a special condition on the mobile repeater station operator's license. If any listed incumbent license on the special condition becomes expired, canceled, or terminated, then this requirement shall not apply to the associated service area beginning 30 days after the change in license status in the Commission's Universal Licensing System, absent the filing of a petition for reconsideration of the change in license status.

* * * * *

3. Section 90.175 is amended by adding paragraph (b)(4) to read as follows:

§ 90.175 Frequency coordinator requirements.

* * * * *

(b) * * *

(4) For any application for public safety mobile repeater station operations on frequencies denoted by both §§ 90.20(d)(32) and 90.20(d)(34), the frequency coordinator responsible for the application must determine and disclose to the applicant the call signs and the service areas of all active co-channel incumbent remote control and telemetry stations inside the

applicant's proposed area of operation by adding a special condition to the application, except when the applicant has obtained written concurrence from an affected incumbent licensee, or when the applicant and the incumbent licensee are the same entity.

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